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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/549,133	04/13/2000	Steven M. Swam	2316.1175US01	7533
23552	7590	07/12/2005	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			SINGH, RAMNANDAN P	
			ART UNIT	PAPER NUMBER
			2646	
DATE MAILED: 07/12/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/549,133

Applicant(s)

SWAM ET AL.

Examiner

Ramnandan Singh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28,30-40,42-47 and 49-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 52-56 and 58-65 is/are allowed.
- 6) ☒ Claim(s) 1-3,9-11,13-17,19-22,28,31-37,39,42-44,46,49-51, 57 and 66-68 is/are rejected.
- 7) ☒ Claim(s) 4-8,12,18,23-27,30,38,40,45 and 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>Aug. 30, 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed Aug. 20, 2004 have been fully considered but they are not persuasive.

(i) Applicant's argument---"The lines 70, 72, 74 are not mounted to a circuit board of an interface card, as required by claim 52 (51)" on page 22.

Examiner's response --- Examiner respectfully disagrees. Guenther et al state, "While the diagrams appear to depict wire wrap connections, it should be understood that any connecting method may be used, for example, short connectorized jumpers, insulation displacement connectors, circuit card connectors, direct connection from the card to the terminal on the terminal block, etc." col. 9, lines 10-15. Clearly, mounting the connecting lines 70, 72, 74 to a circuit board (or card) is one of connecting methods known to one of ordinary skill in the art.

(ii) Applicant's argument---"Guenther does not disclose both cable (three each) and card edge connectors mounted on opposite ends of a circuit board" on page 22.

Examiner's response --- Examiner disagrees. Applicant is respectfully directed to col. 7, lines 11-52 of Guenther et al, wherein both cable (three each) and card edge connectors are mounted on opposite ends (i.e. front end and back end) of a **circuit board** (i.e. **splitter circuit on a card**) [Figs. 7-8].

2. **Status of Claims**

Claims 1, 15, 27, 37, 42-44, 49-51 are amended.

Claims 29, 41 and 48 are cancelled.

New claims 52-69 are added.

Claims 1-28, 30-40, 42-47 and 49-69 are pending.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 51 is rejected under 35 U.S.C. 102(e) as being anticipated by Guenther et al [US 6,438,226 B1].

Regarding claim 51, Guenther et al teach a telecommunication component (i.e. **splitter assembly**), as shown in Fig. 4, comprising:

a chassis (i.e. **housing**) wherein splitter assembly 10 has housing 12 [Figs. 1-4; col. 4, lines 50-58];

a plurality of interface cards 40 (i.e. **splitter cards**) secured to the chassis (i.e. **housing**) wherein each card 40 includes a circuit board (i.e. **a splitter circuit on a**

card) [Abstract] with two edges 44a, 44b mounted in interior 14 [Figs. 1-3; col. 5, lines 39-54];

a first cable connector for inputting twisted pair, mixed data/voice signals (i.e. **line connector 74**) to the circuit board (i.e. **card**);

a second cable connector for outputting twisted-pair (i.e. **POTS connector 70**) , voice signals from the circuit board (i.e. **card**);

a third cable connector for outputting twisted pair, data signals (i.e. **data connector 72**) from the circuit board [col. 2, lines 32-39; col. 4, lines 50-66; col. 5, line 35 to col. 6, line 2; col. 7, lines 11-21; col. 9, lines 11-15];

one or more card edge connectors (i.e. **cards 103 have opposing edges 106 and 107 and circuit card (edge) connectors**) mounted adjacent to the end of the circuit board (i.e. **card**) [See Figs. 7-8] , [col. 7, lines 16-18; col. 9, lines 10-15] including POTS contacts 80, xDSL contacts 82, line contacts 84 which may normally be open or closed contacts [Figs. 10-12; col. 8, line 29 to col. 9, line 15]; and

a POTS splitter card (i.e. a splitter circuit (78) for combining/splitting POTS signals and xDSL signals) mounted in the chassis and electrically connected to the card edge connector of the interface [Figs. 1-5; col. 6; lines 3-24; col. 7, lines 32-52; col. 5, line 55 to col. 6, line 24; col. 1, lines 31-51; Abstract].

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-3, 9-11, 13-14, 15-17, 19-22, 28, 31-37, 39, 42-44, 46, 49-50, 57, 66-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al [US 66,438,226 B1] in view of Lemke [US 4,824,383].

Regarding claim 1, Guenther et al teach a telecommunication component (i.e. **splitter assembly**), as shown in Fig. 4, comprising:

a circuit board (i.e. **a splitter circuit on a card**) [Abstract];

a first multi-pair cable connector for inputting twisted pair, mixed data/voice signals (i.e. **line connector 74**) to the circuit board (i.e. **card**);

a second multi-pair cable connector for outputting twisted-pair (i.e. **voice connector 70**) , voice signals from the circuit board (i.e. **card**);

a third multi-pair cable connector for outputting twisted pair, data signals (i.e. **data connector 72**) from the circuit board [col. 2, lines 32-39; col. 5, line 55 to col. 6, line 2; col. 9, lines 11-15];

one or more card edge connectors (i.e. **cards 103 have opposing edges 106 and 107 and circuit card (edge) connectors**) [Figs. 7-8; col. 7, lines 16-18; col. 9, lines 10-15] including POTS contacts 80, xDSL contacts 82, and line contacts 84 which may normally be open or closed contacts [Figs. 10-12; col. 8, line 29 to col. 9, line 15].

Although Guenther et al teach that each card may retain two or more circuits with three pairs of contacts for each circuit [col. 7, lines 22-28], they do not disclose

expressly any means employed therein for electrically isolating those three sets of connectors. So one of ordinary skill in the art would have been motivated to seek any known means suitable to electrically maintain separation between any two of those connectors, such as the tracings employed by Lemke [US 4,824,383].

Lemke teaches a terminator and corresponding receptacle for multiple electrical conductors in an environment of an edge card, and a circuit board 86 having multiple conductive tracings 88 thereon, wherein providing the closed contacts and the open contacts is a matter of a design choice for the tracings design [Figs. 4, 5; col. 9, lines 39-62].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the multiple tracings of Lemke that electrically isolate individual or groups of contact elements in the connectors to prevent or minimize cross-talk between adjacent conductors [Lemke; col. 2, lines 22-52].

Claim 15 is essentially similar to claim 1 except for a chassis. Guenther et al further teach a chassis (i.e. **housing**) wherein splitter assembly 10 has housing 12 [Figs. 1-4; col. 4, lines 50-58].

Claim 28 is essentially similar to claim 1 except for a grouping of contacts. Guenther et al further teach that all the first contacts (i.e. **POTS contacts 84**) and the

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second contacts (i.e. **xDSL contacts 82**) are located at the first extension (i.e. **a pair of terminals**), and all of the third contacts (i.e. **outside plant contacts 85**) are connected to a second extension (i.e. **outside plant line 75**) to carry a combined signal between a subscriber and a central office [Fig. 11; col. 8, lines 46-59].

Claim 31 is essentially similar to claim 1 except for some new terminologies introduced in this claim. The combination of Guenther et al and Lemke further teaches first conductive pathways (i.e. **first tracings**); second conductive pathways (i.e. **second tracings**); and third conductive pathways (i.e. **third tracings**).

Claims 33 , 35 are essentially similar to claim 15 and are rejected for the reasons stated above.

Claim 44 is essentially similar to claim 15 except for a POTS splitter card. Guenther et al further teach a POTS splitter card (i.e. a splitter circuit (78) for combining/splitting POTS signals and xDSL signals) mounted in the chassis and electrically connected to the card edge connector of the interface [Figs. 1-5; col. 6; lines 3-24; col. 7, lines 32-52; col. 5, line 55 to col. 6, line 24; col. 1, lines 31-51; Abstract].

Claim 37 is essentially similar to claim 15 except for a circuit board positioned at an orientation generally perpendicular to the back plane. Guenther et al further teach a circuit board (i.e. (i.e. **a splitter circuit on a card**) 103 positioned at an orientation

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perpendicular with respect to the back place (i.e. **rear face**) 22 wherein a front face 20 is perpendicular with respect to the rear face 22 [col. 6, lines 3-24; col. 7, lines 22-52]; and a POTS splitter card (i.e. a splitter circuit (78) for combining/splitting POTS signals and xDSL signals) mounted in the chassis and electrically connected to the card edge connector of the interface [Figs. 1-5; col. 6; lines 3-24; col. 7, lines 32-52; col. 5, line 55 to col. 6, line 24; col. 1, lines 31-51; Abstract].

Claim 57 is essentially similar to claim 1 except for a circuit board (i.e. **a splitter circuit on a card**) aligned generally at a perpendicular orientation relative to the reference back plane. Although Guenther et al teach a splitter assembly (10) having a housing 12 and circuit board providing no specific orientation [Figs. 1-4; col. 4, lines 50-66], it would have been obvious to one of ordinary skill at the time the invention was made to use any orientation for the circuit board relative to the reference back plane to accommodate the splitters subject to circuit, system and design constraints.

Regarding claim 2, Lemke further teaches a splitter 78 having POTS contacts 80, data contacts 82 and line contacts 84 [col. 5, line 55 to col. 6, line 2; Abstract].

Claim 16 is essentially similar to claim 2 and is rejected for the reasons stated above.

Regarding claim 3, Lemke further teaches a splitter having POTS contacts 80.

Claim 17 is essentially similar to claim 3 and is rejected for the reasons stated above apropos of claim 3.

Regarding claim 9, Guenther et al further teach a circuit board (i.e. (i.e. a **splitter circuit on a card**) 103 positioned at an orientation perpendicular with respect to the back place (i.e. **rear face**) 22 wherein a front face 20 is perpendicular with respect to the rear face 22 [col. 6, lines 3-24; col. 7, lines 22-52].

Regarding claim 10, Guenther et al further teach a splitter card adapted for the one or more card edge connectors wherein cards 103 have opposing edges 106 and 107 [Figs. 7-8; col. 7, lines 11-21].

Claim 11 is essentially similar to claim 3 and is rejected for the reasons stated above apropos of claim 3.

Regarding claim 13, Guenther et al further teach a housing that includes opposite slots (i.e. **holes**) wherein the circuit board (i.e. **splitter card**) is mounted in the slots (i.e. **holes**) [Fig. 5, lines 35-54; Figs. 7-8; col. 7, lines 11-21].

Claim 19 is essentially similar to claim 13 and is rejected for the reasons stated above.

Regarding claim 14, Guenther et al further teach a splitter card adapted for the one or more card edge connectors wherein cards 103 have opposing edges 106 and 107 [Figs. 7-8; col. 7, lines 11-21].

Claim 20 is essentially similar to claim 14 and is rejected for the reasons stated above.

Regarding claim 21, Guenther et al further teach a plurality of the interface cards (i.e. **splitter cards**) mounted within the chassis (i.e. **housing**) [Abstract; col. 5, lines 35-54].

Claim 39 is essentially similar to claim 21 and is rejected for the reasons stated above.

Regarding claim 22, Guenther et al further teach the housing that can hold a single one of the interface card (i.e. **splitter card**) [Abstract; col. 2, lines 29-39].

Regarding claim 32, the combination of Guenther et al and Lemke further teaches conductive pathways wherein the none of the third conductive pathways (i.e. **plates**) on the circuit board (i.e. **card**) cross-over any of the first or second conductive pathways [Lemke; col. 3, lines 49-60].

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Regarding claim 34, Guenther et al further teach that the first and second rows are horizontal rows (i.e. **maintaining horizontal distances between neighboring terminal blocks**) [col. 4, lines 40-51].

Claim 36 is essentially similar to claim 34 and is rejected for the reasons stated above.

Regarding claim 43, Guenther et al further teach a splitter card (i.e. **splitter assembly 10**) mounted in the chassis (i.e. **housing**) and electrically connected to the card edge connector of the interface card [Abstract; col. 5, lines 35-54; col. 7, lines 11-21].

Regarding claim 42, Guenther et al further teach that the splitter card and the interface card are generally co-planar (i.e. **maintaining uniform horizontal and vertical distances between neighboring terminal blocks**) [Figs. 6-9; col. 4, lines 40-51].

Claim 46 is essentially similar to claim 42 and is rejected for the reasons stated above.

Claim 50 is essentially similar to claim 43 and is rejected for the reasons stated.

Claim 49 is essentially similar to claim 42 and is rejected for the reasons stated above.

Regarding claim 66, Guenther et al further teach the telecommunication chassis assembly, wherein each of line (74), voice (70) and data (72) connectors is mounted on the circuit board (i.e. card) [col. 2, lines 32-39; col. 4, lines 50-66; col. 5, line 35 to col. 6, line 2; col. 7, lines 11-21; col. 9, lines 11-15].

Claims 67 and 68 are essentially similar to claim 66 and are rejected for the reasons stated above apropos of claim 66.

Allowable Subject Matter

8. Claims 52-56, 58-65 are allowable.

9. Claims 4-8, 12, 18, 23-27, 30, 38, 40, 45, 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Examiner's Statement of Reasons for Allowance:

This invention relates to a splitter architecture for a telecommunications system.

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Claim 52 identifies the uniquely distinct feature of the splitter architecture comprising: a splitter card adapted for connection to one or more card edge connectors of the circuit board, the splitter includes at least 24 of POTS splitters for splitting the mixed data/voice signals into the data signals and the voice signals. While the closest prior art, Guenther et al [US 6,438,226 B1], Staber et al [US 6,137,866], and Green et al [6,127,631] each teach **splitter architectures**, Guenther et al teach at least one splitter circuit, and Staber et al and Green et al do not teach any specific number of splitter circuits, none of them show or suggest that the splitter architecture include at least 24 of the POTS splitters. As such, the prior art, either singularly or in combination, fail to anticipate or render the above underlined limitation obvious. Hence, claim 52 is allowable.

Claims 58 and 65 are essentially similar to claim 52 and hence they are also allowable.

Dependent claims 4, 12, 18, 40 and 47 are objected to for the reasons as stated for claim 52 above.

Claim 53 identifies the uniquely distinct feature of the splitter architecture comprising: the one or more card edge connectors include a first card edge connector and a separate second card edge connector, the first card edge connector including the normally closed contacts and the second card connector including the normally open contacts. While the closest prior art, Guenther et al [US 6,438,226 B1], Staber et al [US

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6,137,866], Green et al [6,127,631], and Lemke [US 4,824,383] each teach splitter architectures, Lemke discloses tracings , none of them suggest that the first card edge connector include the normally closed contacts, and the second card connector the normally open contacts for a splitter architecture. As such, the prior art, either singularly or in combination, fail to anticipate or render the above underlined limitation obvious. Hence, claim 53 is allowable.

Claims 59 and 64 are essentially similar to claim 53 and hence they are also allowable.

Claims 54-56 and 60-63 are also allowable due to dependence on claims 53 and 59 respectively.

Dependent claims 5, 23, 38, 45 are objected to for the reasons as stated for claim 53 above.

Claims 6-8 are also objected to due to dependence on claim 5.

Claims 24-27, 30 are also objected to due to dependence on claim 23.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramnandan Singh
Examiner
Art Unit 2646



SINH TRAN
SUPERVISORY PATENT EXAMINER